



United States Department of Agriculture
Forest Service

Francis Marion National Forest

Draft Forest Plan Assessment

Francis Marion National Forest, Berkeley and Charleston Counties, South Carolina

Section 6_Social and Economic Assessment

December 2013

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**Francis Marion National Forest
Draft Forest Plan Assessment
Berkeley and Charleston Counties, South Carolina**

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6 Social and Economic Assessment

6.1.1.1 Preliminary Findings

1. Populations surrounding the Francis Marion National Forest are rapidly changing as nearby Forest-dependent communities continue to experience rapid growth. Trends indicate that the region will become increasingly more urban and home to even larger populations of retirees over the next 20 years. As populations surrounding the Forest change, community values and uses associated with the Francis Marion may change.
 - The area surrounding the Francis Marion is predominately urban and land development trends suggest that the area will likely become increasingly urban.
 - The population within the Francis Marion study area steadily grew between 1980 and 2010 (+60 percent). Population growth was unevenly distributed between the eight study area counties, ranging from 12 percent in Orangeburg to 166 percent in Horry County. Growth in Williamsburg has been more varied relative to the other counties. Between 1980 and 2010 Williamsburg's population declined by 10 percent, experiencing considerable population loss during the early 2000s.
 - Populations are forecasted to grow through 2030 and net migration is expected to play an increasing role in the region's anticipated growth.
 - South Carolina's population (median age 37.9) is slightly older than the general U.S. population (median age 37.2) and the population of the eight-county study area (average median age 39) is slightly older than the State's general population.
 - South Carolina has gained considerable attention in recent years as a retirement destination. Between 2007 and 2011 more than 10,000 people 65 years or older moved to South Carolina from another state or country. In-migration by older populations accounted for 6 percent of all new South Carolina residents over this 5-year period. As shown in Table 6-1, the 5 years between 2007 and 2011 brought large numbers of retirees to counties surrounding the Francis Marion as well. While the coastal County of Horry welcomed the greatest number of new residents 65+; the majority of the region's new residents 65 years or older settled in the Forest gateway counties¹ of Berkeley, Charleston, and Dorchester.
2. The natural amenities provided by the Francis Marion contribute to quality of life in local communities and are a driving force behind in-migration to the region.
 - Net migration accounts for the majority share of population change in the study area and accounts for more than half of all population change in Clarendon, Dorchester, Georgetown, Horry, and Williamsburg. Much of the region's in-migration can be attributed to the area's natural and cultural amenities.
 - Natural amenities, often provided by public lands, have been found to influence population and employment changes in amenity rich communities (Knapp and Graves 1989; Clark and Hunter 1992; Treyz et al. 1993; Mueser and Graves 1995; McGranahan 1999; Lewis et al. 2002). As a steward of coastal South Carolina's unique natural and cultural amenities, the Francis Marion increases the attractiveness of local communities and increases regional well-being.

¹ Forest gateway counties are those in close geographic proximity to national forest system lands and have been identified as having strong social and economic ties to the Francis Marion.

3. Environmental justice populations have been identified within the Francis Marion National Forest's study area. Environmental justice populations often have differential patterns of consumption of natural resource and have an increased likelihood of experiencing disproportionately high and adverse effects related to changes in the management of Francis Marion resources.
 - South Carolina's population is more racially diverse than the general U.S. population due to its large African American population. While African Americans account for less than 15 percent of the total U.S. population, nearly 30 percent of the population in South Carolina and the eight-county study area are African American.
 - Relative to the general U.S. population, South Carolina and the eight-county study area had a slightly larger share of residents and families living below the poverty line in 2011. Poverty rates were exceptionally high in Clarendon, Georgetown, Orangeburg, and Williamsburg counties, and exceeded rates at both the State and national level.
4. The Francis Marion contributes to the sustainability of forest-dependent communities by cultivating a robust tourism and recreation industry and by continuing to support economic activity in local logging and wood manufacturing industries. The Forest also contributes to the liveliness of communities by facilitating shared traditions, culture, and activities among individuals belonging to several communities of interest.
 - Economic contributions of managing forest resources can be measured in terms of the jobs and income which they support in forest-related industries. Salary and non-salary regional office and district ranger office Forest expenditures supported 148 jobs (direct, indirect and induced) and approximately \$8.7 million in local labor income across Berkeley, Calhoun, Charleston, Clarendon, Dorchester, Georgetown, Horry, Lexington, Orangeburg, Richland, and Williamsburg counties. In addition to employment and income contributions directly supported by Forest management expenditures, the Forest's resources contribute to economic activity in the local recreation and tourism and timber industries. In 2011 recreation-related spending by Francis Marion visitors was estimated to support 103 jobs and nearly \$3.1 million in local income in the eight counties surrounding the National Forest. Timber and wood products from the Francis Marion were estimated to support 36 jobs and nearly \$1.7 million in local wages and proprietor's income, and Secure Rural Schools and Community Self-Determination Act payments were estimated to support another eight jobs and more than \$373,000 in labor income within Berkeley, Charleston, Clarendon, Dorchester, Georgetown, Horry, Orangeburg, and Williamsburg counties.
 - The natural amenities and recreational opportunities provided by the National Forest help support local tourism and recreation which is generally reflected by the wholesale and retail and accommodation and food services sectors. In 2011 the government (17 percent), wholesale and retail trade (14 percent), and accommodation and food services (11 percent) sectors were the largest employers within the eight-county study area, accounting for 42 percent of total study area employment. A portion of employment in these sectors is directly attributed to the Forest's salary expenditures and by supporting recreational opportunities that stimulate spending in sectors related to recreation and tourism.
 - The Francis Marion can be attributed with contributing to the long-term sustainability of several communities of interest whose members share attitudes, values, and beliefs relating to recreation and Forest access, natural landscapes and development buffer areas, historic and cultural significance, and timber and wood products.

6.1.1.2 Introduction

The Francis Marion National Forest is part of the Atlantic Coastal Forest Ecoregion. Residing in South Carolina's coastal plain the Forest is bounded to the north by Santee River, the Intracoastal Waterway and the Atlantic Ocean to the east. Managed as part of the Francis Marion and Sumter National Forests, the Francis Marion consists of 258,816 acres of upland forests, bottomland and hardwood swamps, maritime forests, salt marshes, and wetland impoundments in Berkeley and northeastern Charleston counties.

The lands which make up the Francis Marion have a rich history which predates European settlement. Although much of the area was once cleared for farming and wide-scale timber harvesting, the Forest has wild landscapes that provide habitat for native and endangered wildlife and supports an abundance of historical, cultural, and recreational opportunities. The Francis Marion features four wilderness areas, seven recreational areas, hundreds of miles of open roads and nearly 120 miles of trails which are used for hiking, horseback riding, mountain biking, off-highway motorized recreation and interpretation of the Forest's historical and cultural significance. Deer hunting with dogs, still deer hunting, small game hunting and turkey hunting are among the most popular activities on the Francis Marion; and its diverse network of waterways which connects slow moving blackwater creeks to the Atlantic Intracoastal Waterway allows visitors to boat, canoe, and fish the Forest's waterways.

To more effectively manage the Francis Marion's natural and cultural resources for current and future generations, the Francis Marion Ranger District is revising its 1996 Resource Management Plan. As part of the Forest's new RMP, this document will provide the social and economic context in which alternative management actions on the Francis Marion National Forest can be analyzed.

6.1.1.3 Existing Conditions

Located 140 miles east of the Forest supervisors' office in Columbia and 40 miles north of the Charleston, the Francis Marion includes the communities of Awendaw, Huger, Jamestown, and McClellanville. While few people live within the Forest boundaries, numerous nearby communities have longstanding social and economic ties to the natural and cultural resources of the Francis Marion. Since neighboring communities may be affected by forest management decisions on the Francis Marion, it is important to examine existing socioeconomic conditions of a broader region in order to establish a baseline in which potential impacts can be measured against. To more effectively examine the linkages between Forest Service lands and the local communities they serve, the geographic scope of this analysis has been expanded beyond Francis Marion boundaries to encompass a broader social and economic study area.

Communities within Berkeley, Charleston, Clarendon, Dorchester, Georgetown, Horry, Orangeburg, and Williamsburg counties were recognized as having the strongest social and economic ties to the Francis Marion. While Francis Marion visitors travel from far and wide, residents of these eight counties were identified as having stronger ties and are most likely to be affected by changes in Forest management because of their reliance on Forest resources to sustain the social, cultural, and economic well-being of their communities. To more accurately measure the economic contributions and potential impacts resulting from changes in management actions on the Forest, the economic study was further extended to include Lexington, Richland, and Calhoun counties which surround the supervisor's office in the capital of Columbia, South Carolina. The following "Existing Conditions" section will analyze trends and current conditions related to the social and economic environment within these study areas, including: population and demographic changes, potential environmental justice populations, and employment and income conditions. To ensure large-scale impacts are addressed without masking changes in smaller regions, this analysis uses a multidimensional approach to analyze trends at the state, aggregated study area, and individual county levels.

Population and Demographics

This section highlights population and demographic trends in the area surrounding the Francis Marion. Population is an important consideration in managing natural resources. In particular, population structure (size, composition, density, etc.) and population dynamics (how the structure changes over time) are essential to describing the consequences of Forest management on the social environment (Seesholtz et al. 2004).

Population Growth. Population growth can be an indicator of a region's desirability to live and work. As displayed in Table 6-1, the rapid population growth in South Carolina and the eight-county study area over the last 30 years suggests that this area is highly desirable to current and prospective residents. While the total U.S. population grew by 36 percent between 1980 and 2010, the State's population increased by 48 percent and total population within the study area increased by 60 percent (U.S. Census 2010).

Growth within the eight-county study area exceeded that of the State and Nation over the last 30 years, growing by 2 percent on annual average. While the population of the eight-county study area grew rapidly between 1980 and 2010, the rate of growth varied considerably between counties included in the study area. Over this 30 year period population growth within the study area was highly concentrated in Berkeley, Dorchester, and Horry counties, while the population of Williamsburg slowly declined. On average these counties grew by 3, 4, and 5 percent, respectively, while Williamsburg decreased by less than 1 percent annually (U.S. Census 2010).

Changes in a region's population can be attributed in part to natural increases (births minus deaths) and in part to net migration, which can affect the availability of housing, services, and jobs. Migration was the driving force behind much of the population change with the State (64 percent) and the study area (62 percent) between 1990 and 2010. Although migration accounted for more than half of net population change in the majority of the counties within the Francis Marion study area, natural changes were still the leading cause of population change in Berkeley (56 percent), Charleston (79 percent), and Orangeburg (97 percent) (Table 6-2) (U.S. Census 2011).

Table 6-1. Population totals: current and historic

	1980	1990	2000	2010	% Change 1980–2010
United States	226,545,805	248,709,873	281,421,906	308,745,538	36%
South Carolina	3,121,820	3,486,703	4,012,012	4,625,364	48%
8 County Area	722,308	847,298	962,760	1,155,951	60%
South Carolina Counties					
Berkeley	94,727	128,776	142,651	177,843	88%
Charleston	276,974	295,039	309,969	350,209	26%
Clarendon	27,464	28,450	32,502	34,971	27%
Dorchester	58,761	83,060	96,413	136,555	132%
Georgetown	42,461	46,302	55,797	60,158	42%
Horry	101,419	144,053	196,629	269,291	166%
Orangeburg	82,276	84,803	91,582	92,501	12%
Williamsburg	38,226	36,815	37,217	34,423	-10%

Source: U.S. Census Bureau, 1990, 2000, 2010.

Table 6-2. Components of population change between 1990 and 2010

	Natural Causes	Net Migration	Net Population Change 1990–2010	Percent Change from Natural Causes	Percent Change from Net Migration
South Carolina	412,067	726,987	1,139,054	36%	64%
8 County Area	116,625	192,025	308,650	38%	62%
Berkeley	27,699	21,486	49,185	56%	44%
Charleston	43,694	11,356	55,050	79%	21%
Clarendon	1,676	4,845	6,521	26%	74%
Dorchester	14,867	38,628	53,495	28%	72%
Georgetown	4,094	9,762	13,856	30%	70%
Horry	14,505	110,733	125,238	12%	88%
Orangeburg	7,447	250	7,697	97%	3%
Williamsburg	2,643	-5,035	-2,392	34%	66%

Source: U.S. Census Bureau, 2011 (Table 5).

Amenities (the natural, cultural, and social characteristics of an area) have played an increasing role in U.S. migration. Areas characterized as having high levels of natural amenities (unique land and water features, mild temperatures, scenic quality, and recreation opportunities of a geographic region) have been shown to experience greater population growth than areas with fewer natural amenities (Rudzitis and Johansen 1991; Johnson and Beale 1994; Johnson and Beale 1998; McGranahan 1999; Hunter et al. 2005; Frenzt et al. 2004), and that this growth occurs increasingly at the boundaries of public lands (Hansen et al. 1998; Radeloff et al. 2001). In recent years communities surrounding the Francis Marion, like those in Dorchester and Horry counties, have become increasingly attractive to many Americans because of their proximity to open spaces and natural settings which provide residents with easy access to recreational opportunities year round. As a steward of South Carolina's public lands, a portion of population growth in this region can be attributed to the scenic beauty and outdoor recreation supported by the Francis Marion.

Future population projections suggest that migration will likely play an increasing role in population changes as national, State, and county populations grow. As shown in Table 6-3, South Carolina and the eight-county study area are projected to grow faster than the general U.S. population. Projections indicate that Berkeley, Dorchester, and Horry counties will continue to experience high levels of population growth while Williamsburg County is expected to experience further population loss (South Carolina Budget and Control Board 2013). These forecasts show that study area growth is anticipated to remain concentrated in communities which offer residents relatively easy access to recreation, open space and wildlands, provided by the Francis Marion.

Table 6-3. Population projections 2015–2030

	2015	2020	2025	2030	Growth Between 2010 and 2030
United States	321,363,000	333,896,000	346,407,000	358,471,000	16.1%
South Carolina	4,823,200	5,020,800	5,235,500	5,451,700	17.9%
8 County Area	1,218,500	1,280,800	1,344,500	1,408,400	21.8%
South Carolina Counties					
Berkeley	187,800	197,700	208,400	219,100	23.2%
Charleston	360,600	370,900	383,800	396,700	13.3%
Clarendon	35,600	36,300	37,400	38,600	10.4%
Dorchester	152,000	167,400	178,800	190,200	39.3%
Georgetown	61,300	62,500	63,800	65,100	8.2%
Horry	294,600	319,900	345,800	371,700	38.0%
Orangeburg	92,800	93,000	93,500	94,100	1.7%
Williamsburg	33,800	33,100	33,000	32,900	-4.4%

Source: <http://www.census.gov/population/projections/data/national/2012/summarytables.html>.

Population Density. Population density measures the number of people living per square mile within a given area. This measure can serve as a valuable indicator of the socioeconomic and living conditions of a region, including: urbanization, availability of open space, socioeconomic diversity, and civic infrastructure (Horne and Haynes 1999). In general, more densely populated areas tend to be more urban, diverse, and offer more access to public infrastructure. In contrast, less densely populated areas provide greater access to open spaces and wildlands, which may offer natural amenity values to residents and visitors. Table 6-4 displays the number of people per square mile at the county, State, and national levels (U.S. Census Bureau: State and County QuickFacts).

South Carolina has experienced substantial population growth over the last 30 years, causing the State to become much more densely populated than the nation as a whole. In 2010, nearly half of the counties included in the Francis Marion study area had twice as many people per square miles relative to population density for the nation (Table 6-4). While population densities surrounding the Francis Marion are high relative to the nation, population densities for Clarendon, Georgetown, Orangeburg and Williamsburg remain low (U.S. Census Bureau 2010).

Table 6-4. People per square mile

	2000	2010
United States	79.7	87.4
South Carolina	133.5	153.9
Berkeley	130.0	161.8
Charleston	337.5	382.3
Clarendon	53.5	57.6
Dorchester	167.8	238.2
Georgetown	68.5	73.9
Horry	173.4	237.5
Orangeburg	82.8	83.6
Williamsburg	39.9	36.8

Source: U.S. Census Bureau, 2010.

Population projections for the Lowcountry region of South Carolina indicate that region surrounding the Francis Marion will continue to grow through 2030. These population projections reflect continued urban, suburban, and ex-urban development, enabling counties surrounding the Francis Marion to become more densely populated. Growth within these counties is unlikely to be distributed evenly among local communities and can cause some areas to become more urban while others become increasingly more decentralized.

Although population density may indicate whether a county is classified as urban or rural, it is not a measure of the concentration of urban and rural areas within a county. Large disparities between urban and rural areas remain in terms of economic conditions, access to infrastructure and services—including public transportation, opportunities for socioeconomic mobility, and control over natural resources. Disparities are caused by natural differences, political decisions, and social factors. Figure 6-1 displays the distribution of urban and rural areas within study area counties.

Urban areas account for the majority of land surrounding the Francis Marion. In 2010, urban areas dominated five of the eight counties which make up the study area. Though little human development exists within Forest boundaries, urban growth has drastically altered the rural landscape of the region and caused growing concern over urban sprawl. Increasing residential and commercial development in Berkeley and Charleston counties has overrun many small, rural and unincorporated communities and has placed added pressure on the wildland-urban interface that separates the natural terrain of the Francis Marion from developed lands. Rapid urban expansion of the Charleston area during the 1990s gained considerable attention after county officials concluded that the rate at which land was being developed was unsustainable (Johnson et al. 2009). According to a 1997 report published by the Berkeley-Charleston-Dorchester Council of Governments (BCD COG), residential and commercial development in Berkeley, Charleston, and Dorchester counties had outpaced population growth by a ratio of 6:1 between 1973 and 1994. Though residents, community officials, and government agencies have been working together to mitigate the effects of continued urban growth in the region, the region surrounding the Francis Marion is anticipated to become increasingly more urban. Even assuming urban development would slow, the urban area surrounding the Charleston metropolitan area is predicted to triple by 2030 (Allen and Lu 2003).

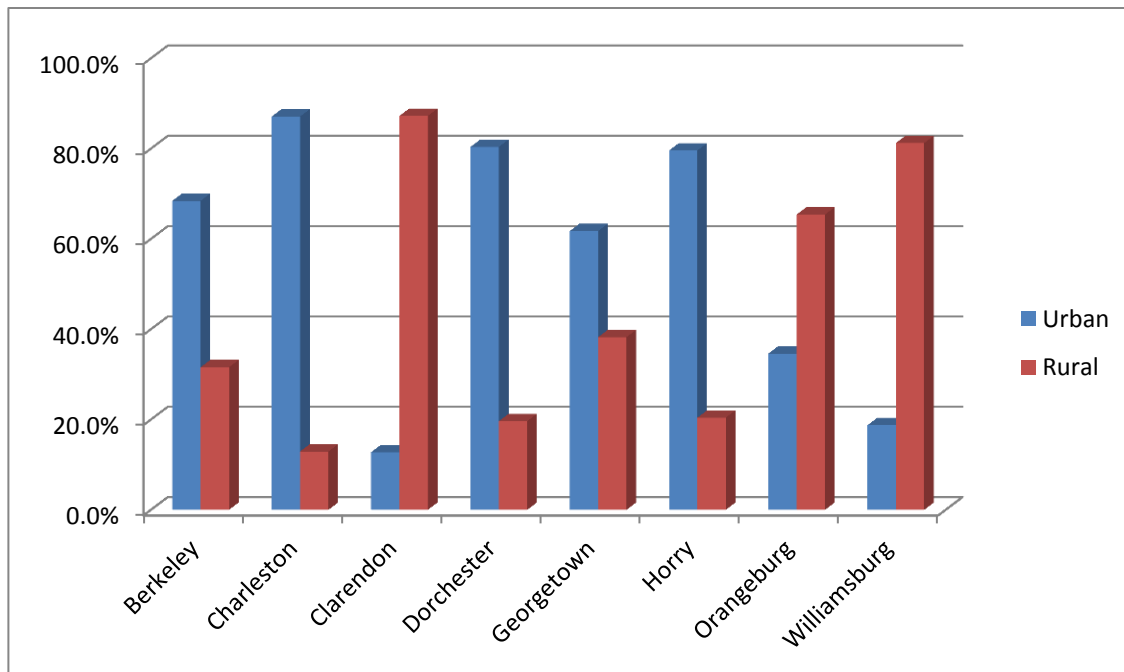


Figure 6-1. Urban-rural distribution, 2010

Source: U.S. Census Bureau (Table H2).

Growing populations and the encroachment of human development will place greater demand on Forest resources and may affect the natural aesthetics and uses associated with Francis Marion lands. Forest management can expect to be tasked with maintaining the quality of visitors' experiences while providing Forest products and unique cultural and recreational experiences to a greater number of people. As urban and suburban populations grow, conflicts between local residents and Forest visitors may increase.

While living proximate to public lands may provide local residents with amenities such as convenient access to recreation and wildlife viewing, increased Forest congestion causes disamenities such as crowds, litter, and noise (Garber-Yonts 2004; Bolitzer and Netusil 2000; Moore et al. 1992). Increased urbanization of areas surrounding the Francis Marion also increases the region's need for infrastructure and places greater pressure on Forest management to provide utility right-of-ways to meet the region's growing infrastructure needs which may have a negative effect on the visual resources of the Forest. The pressure of native landscapes to adapt to these conflicting pressures threatens the Forest's sense of place and the quality of life in communities surrounding the Forest (Stedman 2003).

Age. A population's age may affect community values and uses associated with Forest lands, making it relevant to Forest management decisions. In 2010 the median age in the United States was estimated to be between 37.2 and 37.9 in South Carolina (U.S. Census Bureau 2010). In general South Carolina's population is slightly older than the general U.S. population and the population of the eight-county study area is slightly older than the State's general population. Table 6-5 lists median ages within the study area.

In general, the United States is growing older. In 2010 there were 40.4 million Americans 65 years or older and America's older population (65 years +) is expected to reach 83.7 million and account for nearly 21 percent of the country's population in 2050 (U.S. Census Bureau 2012). The graying of the U.S. is largely attributed to the post-WWII "baby boom generation" (those born between 1946 and 1964) who will start entering the 65+ demographic in 2011. Though many aging American's spend their retirement

years in the homes and communities where they have raised families and worked, trends indicate that a sizable share of Americans 65+ have been moving to amenity-rich places which are characterized as having warmer average temperatures and lower rates of crime and taxes (Clark and Davies 1990; Conway and Houtenville 1998; McGranahan 1999; Serow 2000).

Table 6-5. Median age, 2010

	Berkeley	Charleston	Clarendon	Dorchester	Georgetown	Horry	Orangeburg	Williamsburg
Median Age	34.5	35.9	41.4	35.6	45.4	41.1	38.1	40.2

Source: U.S. Census Bureau, 2010.

South Carolina has gained considerable attention in recent years as a retirement destination. Between 2007 and 2011 more than 10,000 Americans 65 years or older moved to South Carolina from another State or country. In-migration by older populations accounted for 6 percent of all new South Carolina residents over this 5-year period (U.S. Census Bureau 2007–2011 American Community Survey). As shown by Table 6-6, the 5 years between 2007 and 2011 brought large numbers of retirees to counties surrounding the Francis Marion as well. While the coastal County of Horry welcomed the greatest number of new residents 65+; the majority of the region’s new residents 65 years or older settled in the Forest gateway counties of Berkeley, Charleston, and Dorchester. As a steward of the natural and cultural amenities which make this area an attractive retirement destination, the Francis Marion can be attributed with attracting a share of migrating retirees and retirement income to the eight-county study area. As populations surrounding the forest grow older, community values and uses associated with the Francis Marion may change. In general, older Forest users demand more leisurely recreational experiences and have a greater need for easily accessible facilities than younger Forest users.

Table 6-6. Migration of individuals 65+, 2007–2011

Location	Moved from Another South Carolina County	Moved from Another State	Moved from Another Country
Berkeley	258	242	48
Charleston	367	821	57
Clarendon	0	59	0
Dorchester	380	297	0
Georgetown	136	143	85
Horry	187	1,368	84
Orangeburg	82	31	0
Williamsburg	13	42	0

Source: U.S. Census Bureau: American Community Survey (Table B07001).

Educational Attainment. Educational attainment measures the number of people within a region who have earned a high school diploma or bachelor’s degree. Levels of education can be an important indicator of the social and economic opportunities and ability of an area to adapt to change. Table 6-7 lists the percentage of the adult population with at least a high school diploma and a bachelor’s degree.

Table 6-7. Educational attainment, percent of persons age 25+

	High School Diploma +	Bachelor's Degree +
United States	85.4%	28.2%
South Carolina	83.6%	24.2%
Berkeley	86.0%	19.2%
Charleston	87.9%	37.7%
Clarendon	75.8%	13.4%
Dorchester	88.9%	24.6%
Georgetown	84.5%	22.0%
Horry	87.4%	21.9%
Orangeburg	78.4%	17.3%
Williamsburg	77.8%	11.3%

Source: U.S. Census Bureau, 2010.

While the majority of South Carolina adults have obtained at least a high school diploma, educational attainment in South Carolina is low relative to other areas of the country. While roughly 85 percent of the U.S. population holds a high school diploma and 28 percent have a Bachelor’s degree or higher, only 84 percent of South Carolina residents 25 or older have completed high school and just over 24 percent have obtained at least an undergraduate degree. Educational attainment is exceptionally low in the rural counties of Clarendon, Orangeburg, and Williamsburg where less than 80 percent of residents over the age of 25 have high school diplomas and only a small fraction hold a Bachelor’s degree or higher. Low educational attainment in rural areas is not uncommon. Since rural communities generally offer few opportunities for educational or occupational advancement they often struggle to retain and attract educated and highly skilled individuals. Frequently residents interested in pursuing advanced education move from these rural communities to more economically advanced areas which support greater educational opportunities. The out-migration of talented and educated residents is often referred to as “brain drain.”

A large share of the region’s institutions for higher education is located in Charleston County, with several two-year, four-year, and trade schools located in the Northern Charleston area. In general the population of Charleston County tends to be relatively more educated, with educational attainment rates exceeding those of the State and the county. In 2010 approximately 88 percent of Charleston County’s population possessed high school diplomas and nearly 38 percent of its population held a Bachelor’s degree or higher. The presence of so many highly educated adults may be self-reinforcing as a highly educated population tends to be a signal that an area provides economic and cultural opportunities, attracting additional college educated adults to the area. This process leads to further economic development and job creation. In contrast, areas with low levels of educational attainment tend to have lower levels of human capital, which reduce the area’s ability to capitalize on economic change (Florida 2002).

Racial and Ethnic Composition. South Carolina’s population tends to be more racially diverse than the general U.S. population. While 74 percent of the country’s population identifies themselves as White, Whites only account for 67 percent of the State’s population. Historically African American populations

in South Carolina have accounted for a large share of the State's population. In 2010, roughly 28 percent of South Carolina residents identified themselves as Black or African American. While individual shares are small, Native Americans, Asians, Pacific Islanders, and individuals identifying with some other or multiple races account for nearly 5 percent of the State's population (U.S. Census Bureau 2010).

Minority populations make up an even larger share of the population within the eight-county study area. While shares of Native Americans, Asians, Pacific Islanders, and individuals identifying with some other or multiple races only make up 5 percent of the region's population, African Americans account for nearly 30 percent of the region's population (U.S. Census Bureau 2010). As shown in Figure 6-2, there is considerable variation in the racial composition of study area counties.

Figure 6-2. Racial composition, 2010

Source: U.S. Census Bureau, 2010 (Table QT-P6).

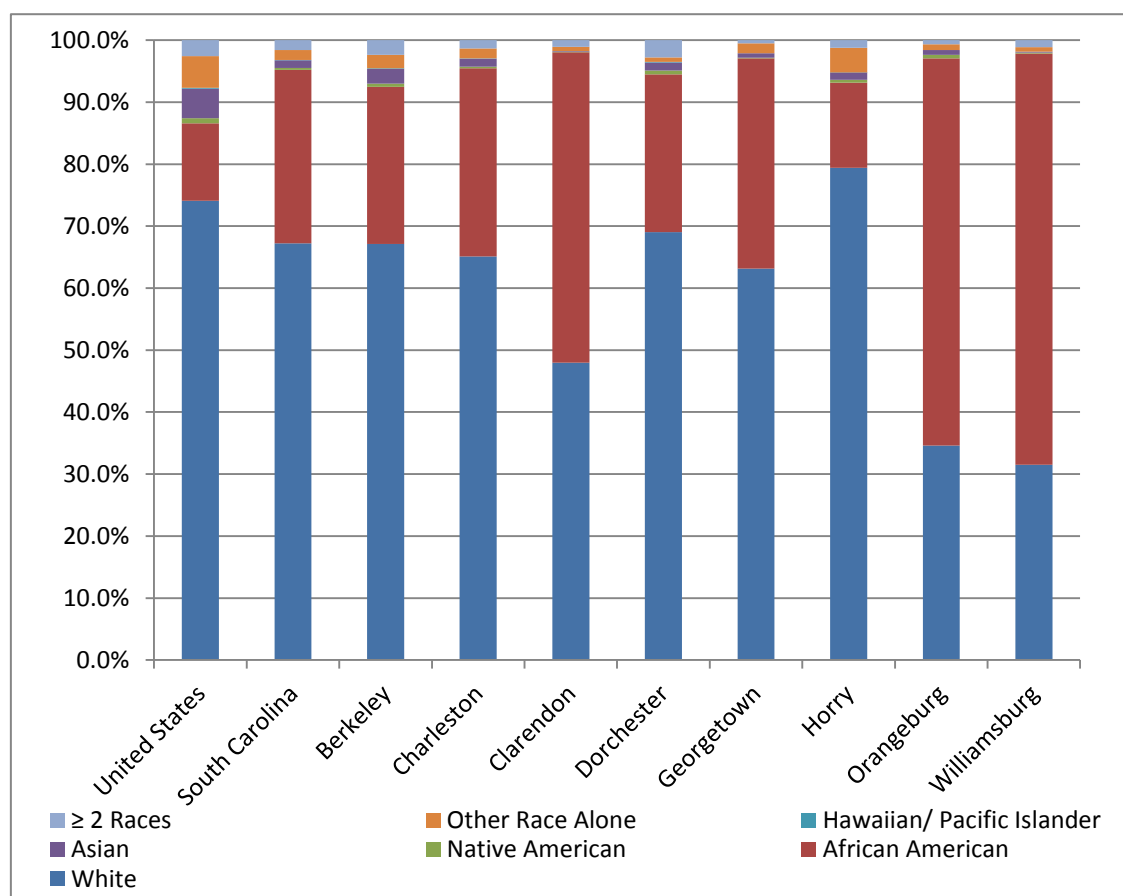


Figure 6-2 shows county, State, and national populations by racial group share of total population. Within the study area Horry County was the least racially diverse, with roughly 80 percent of the population identifying themselves as White alone; while Williamsburg was the most diverse with Whites accounting for only 32 percent of the population. The area surrounding the Francis Marion has a large African American population, with African Americans making up 50 percent or more of the population in Clarendon, 63 percent in Orangeburg, and 66 percent in Williamsburg.

Many Americans identify with racial groups based on physical attributes, but continue to be proud of the cultural heritage from which they descend. Although Americans may appear to look White, Black, Asian, or belonging to some other racial group, they often continue to speak the native language and follow cultural traditions from the regions where their families originated. This is especially common among Americans of Hispanic, Latin, or Spanish descent. In 2010, roughly 17 percent of Americans described their family ancestry as being Hispanic, Latin, or Spanish. While these cultures have a noticeable presence in the United States, only 5 percent of the State and study area's population reported being of Hispanic descent. Even though Hispanics accounted for a slightly greater share of the population in Berkeley (6 percent) and Horry (6 percent) counties, Hispanic cultures are less predominant in this region of the country relative to the United States as a whole (U.S. Census Bureau 2010).

Employment and Income

The previous section discussed demographics and population trends in counties surrounding Francis Marion National Forest relative to the State and nation. The following section will focus on economic conditions within the study area to further develop a baseline on which potential impacts can be measured.

Unemployment. Unemployment rates measure the percent of the local work force that is jobless but actively seeking employment. Though public officials strive for full-employment, structural unemployment (mismatch between labor skills and available jobs within a region) and frictional unemployment (people moving or transitioning employment) cause rates to persist even in times of economic prosperity. The existence of structural and frictional unemployment implies that there is an inherent “natural” rate of unemployment. The natural rate of unemployment is believed to fall somewhere between 5 and 6 percent and allows workers to move between jobs and industries without signaling broad economic distress. Figure 6-3 provides the annual unemployment rate of the study area relative to the State and Nation between 1990 and 2011.

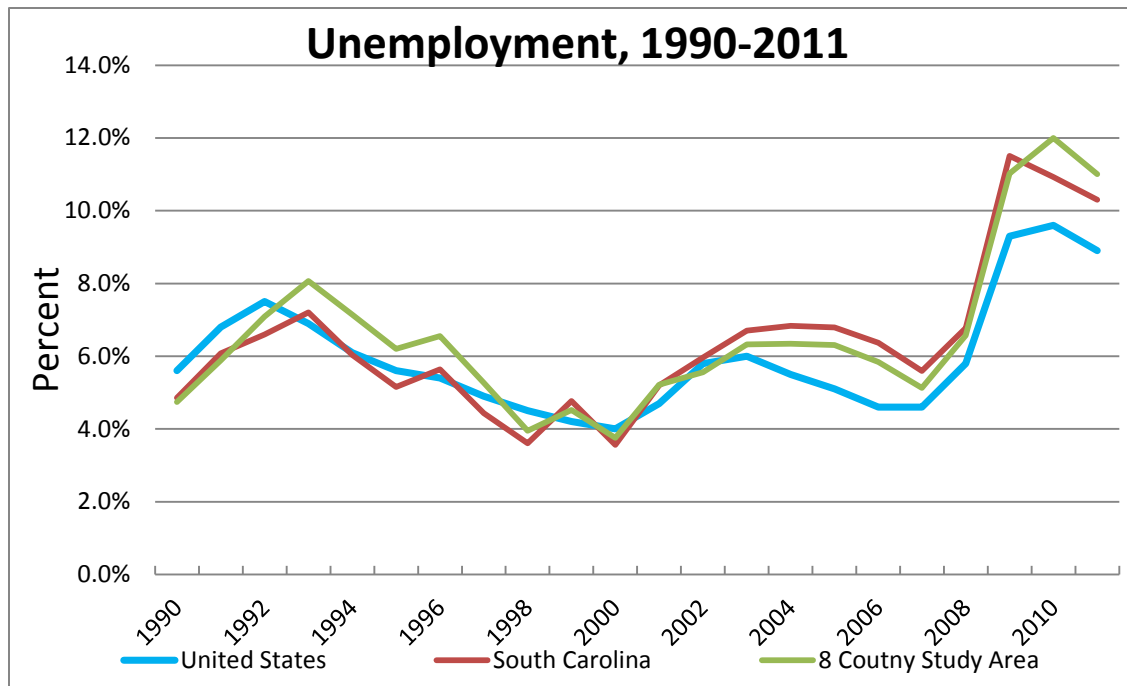


Figure 6-3. Unemployment 1990–2011

Source: Bureau of Labor Statistics, 2013.

Table 6-8. Unemployment in study area, 2005–2011

	Percent of Total Labor Force						
	2005	2006	2007	2008	2009	2010	2011
Berkeley	5.4	5.5	4.7	6.1	10.5	9.1	15.6
Charleston	5.5	5.0	4.3	5.3	9.0	11.7	9.1
Clarendon	9.8	9.1	8.3	9.7	15.4	15.8	16.0
Dorchester	5.3	5.0	4.3	5.6	10.0	16.0	12.1
Georgetown	8.7	7.0	6.1	7.4	12.2	11.5	12.4
Horry	5.8	5.5	5.0	7.0	12.0	14.2	11.1
Orangeburg	9.7	9.1	8.0	10.0	15.6	11.9	9.9
Williamsburg	11.2	9.8	8.9	10.3	14.9	18.8	11.4

Source: Bureau of Labor Statistics, 2013.

Historically, unemployment in the eight-county study area has closely mirrored Statewide trends and generally remains high relative to the national rate. The economic downturn in 2007 caused unemployment across the U.S. to rise, hitting South Carolina and the region surrounding the Francis Marion relatively hard. Since 2007, unemployment in the U.S has averaged 7.6 percent while average unemployment in South Carolina and the study area hovered around 9 percent. As shown in Table 6-8, unemployment drastically increased in 2009 as counties surrounding the Francis Marion witnessed an average increase of 4.8 percent in unemployment relative to 2008 rates. Although unemployment rates for Charleston and Orangeburg counties hover around those of the Nation, rates for the remaining five counties remain high relative to State and national statistics (Bureau of Labor Statistics 2013).

Employment and Specialization. The local economy examined in the analysis of the Francis Marion is diverse and supports employment in more than 300 industries. In general these industries are identified as being either services related or non-services related. Services-related sectors include: utilities; wholesale trade; retail trade; transportation and warehousing information; finance and insurance; real estate and rental and leasing; professional, scientific, and technical management of companies and enterprises; administrative and support services; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation and food services; and other services. Non-services-related sectors consist of: mining, construction, manufacturing, and agriculture, forestry, fishing, and hunting.

Total employment in the eight-county study area increased from 348,044 to 377,939 jobs between 1998 and 2010. Though job creation is perceived as desirable, much of this growth can be attributed to growth in services-related industries which generally pay lower wages than those in non-services sectors. Study area jobs in service-related sectors paid on average 36 percent less than jobs in non-services-related fields (Bureau of Labor Statistics 2012). Between 1998 and 2010 employment in non-services-related sectors declined by 28 percent while employment in services related sectors increased by 18 percent. In 1998 services-related sectors supported 79 percent of regional employment, with services-related employment growing to 86 percent of total employment in the eight counties surrounding the Francis Marion by 2010 (Bureau of Labor Statistics 2012). Although increases in services-related employment relative to non-services employment may have a negative effect on wages in the region, employment in the service sector may play an important role in increasing labor participation of the area's minority or underserved populations. In general, services-related sectors provide greater employment opportunities for women and minority racial groups than industries in the non-service sector, which may have a positive effect on the social and economic well-being of these communities.

Economic diversity generally promotes stability and offers greater employment opportunities. Highly specialized economies (i.e., those that depend on a few industries for the bulk of employment and income) are prone to cyclical fluctuations and offer more limited job opportunities. Assessing employment by sector helps identify industries which are important to the local economy surrounding the Francis Marion. Figure 6-4 shows local employment in aggregated sectors as a share of total employment (IMPLAN 2011). In 2011 the government (17 percent), wholesale and retail trade (14 percent), and accommodation and food services (11 percent) sectors were the largest employers within the eight-county study area, accounting for 42 percent of total study area employment. A portion of employment in many of these industries can be directly or indirectly attributed to the Francis Marion. Employment contributions provided by the Francis Marion are discussed later in the "Forest Contributions" subsection.

The Interior Columbia Basin Ecosystem Management Project identified communities that were specialized with respect to employment. Employment specialization can be examined using the ratio of the percent employment in each industry in the region of interest (eight-county study area) to the percent of employment in that industry for a larger reference region (the State of South Carolina). For a given industry, when the percent employment in the analysis region is greater than in the reference region, local employment specialization exists in that industry (USDA Forest Service 1998). Applying this criterion to 2011 employment data for the Francis Marion study area reveals that the region is specialized with respect to the accommodations and food services (+3 percent), followed by the real estate and rental sector (+1.7 percent) and the arts, entertainment and recreation sector (+1.3 percent), retail trade (+0.6 percent), professional services (+0.4 percent), and transportation and warehousing (+0.3 percent).

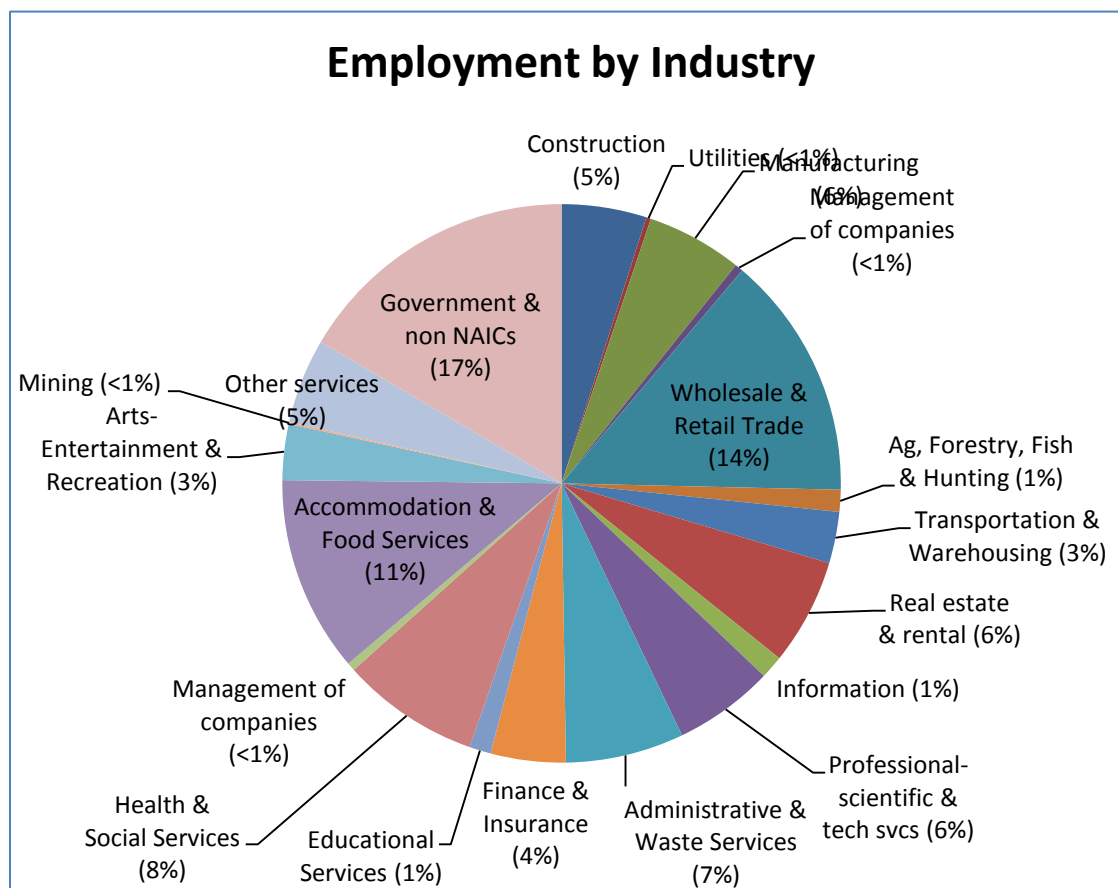


Figure 6-4. Employment by industry, 2011

Source: IMPLAN, 2011.

Employment specialization is of particular interest when specialization occurs in sectors related to forest management. A portion of employment in the sectors shown in Figure 6-5 can be attributed to forest management, timber production² and recreation on the Francis Marion. The government sector includes all Federal, state and local employment, while a portion of employment in the accommodations and food services, arts, entertainment and recreation, retail trade, and passenger transportation sectors is specifically attributed to tourism and recreation (Marcouiller and Xia 2008). Relative to the State of South Carolina, the eight-county local economy is less specialized in sectors related to forestry and more specialized in the service-related sectors that support recreation and tourism. Specialization in the four recreation-related sectors highlights the importance of tourism and recreation to the local economy. While the Charleston area provides an abundance of recreational opportunities, the unique recreational experiences of the Francis Marion are attributed with attracting outdoor recreationists to the Charleston area. For a more detailed discussion of the Forest's recreation-related employment contributions see the "Recreation" section included in "Forest Contributions".

² Sectors related to timber include: Forestry and logging (IMPLAN; sectors 15, 16, 19, 335), primary forest products manufacturing (IMPLAN; sectors 31, 95, 96, 98, 105), and secondary forest products manufacturing (IMPLAN; sectors 97, 99, 100, 102, 106, 107, 108, 109, 110, 111, 112, 295, 297, 301, 302) (BBER 2010).

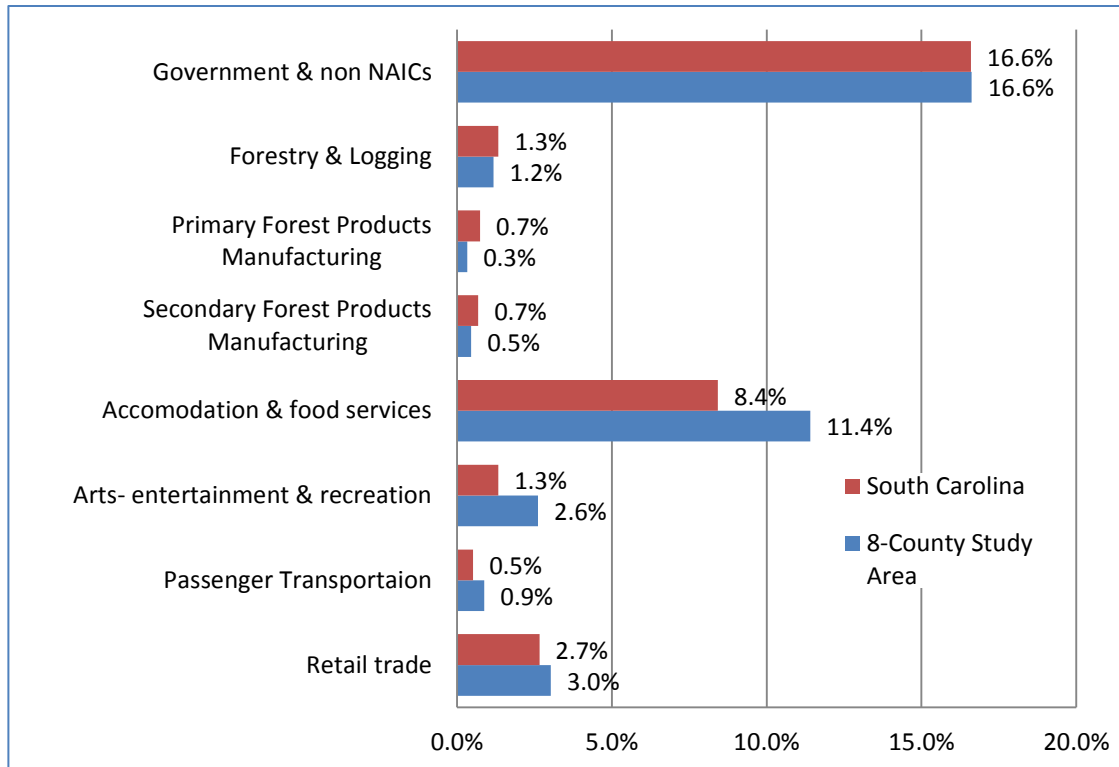


Figure 6-5. 2011 State and study area employment distribution for forest-related sectors

Source: IMPLAN 2011

Personal Income. Personal income is a key indicator of the economic well-being of a county and provides a measure of all sources of income within the study area. High personal income may be a signal of greater job opportunities, highly skilled residents, greater economic resiliency, and well-developed infrastructure. Low personal income is often a reflection of the poor economic conditions and relatively few economic opportunities available within a region. Total personal income (TPI) in the study area exceeded \$41.3 billion dollars in 2011, with Charleston County accounting for more than one-third of the study area's TPI. Personal income in the study area has grown much more rapidly than TPI across the State. Between 2000 and 2011 total personal income in South Carolina grew by 18.6 percent while TPI within the eight-county study area grew by 30.4 percent (adjusted for inflation and reported in 2011 dollars) (Bureau of Economic Analysis 2012).

Per capita personal income (PCPI) measures average income per person in a region. Historically PCPI in South Carolina and much of the region surrounding the Francis Marion National Forest has been lower than that across the country. As shown by Table 6-9, PCPI across the State and country has steadily increased between 1990 and 2011. While PCPI at the State level grew at a slightly slower rate than that of the Nation, per capita personal income across the study area occurred much more rapidly. On average PCPI rose by 32 percent across the study area between 1990 and 2011, with sluggish growth in Horry County (+9 percent) and very rapid growth in Georgetown County (+51 percent). Though personal income in the region has increased, average PCPI within the study area remains below that of the State and the country (Bureau of Economic Analysis 2012).

Table 6-9. Per capita income, 1990 and 2011 (adjusted for inflation and reported in 2011 dollars)

	1990	2011	% Change 1990–2011
United States	33,309	41,560	25%
South Carolina	27,268	33,388	22%
Berkeley	24,402	33,184	36%
Charleston	30,400	41,656	37%
Clarendon	18,998	24,431	29%
Dorchester	27,251	33,468	23%
Georgetown	25,420	38,403	51%
Horry	26,698	29,148	9%
Orangeburg	22,663	28,965	28%
Williamsburg	18,630	27,263	46%

Source: Bureau of Economic Analysis, 2012.

There are two major sources of personal income: (1) labor earnings or income earned through employment and (2) non-labor income. Labor earnings, or wages, were supported by a wide range of industrial sectors and represented 63 percent of the study area's TPI in 2011. Although wages can fluctuate between counties and across industries, average annual wage in the Francis Marion National Forest study area remain well below those of the State and the Nation. In 2011 the average annual wage in the eight-county study area was \$34,716, ranging from \$27,885 in Clarendon County to \$43,744 in Berkeley County (Table 6-10). On average, study area jobs in service-related sectors paid 36 percent less than jobs in non-services-related fields.

Table 6-10. Average annual wages, 2011

	Average Annual Wage (\$)		
	All Sectors	Services	Non-Services
United States	49,049	46,983	57,397
South Carolina	39,231	35,731	49,030
Berkeley	43,744	38,522	59,027
Charleston	42,354	37,417	58,982
Clarendon	27,885	22,930	31,223
Dorchester	33,109	26,416	53,621
Georgetown	34,815	27,604	49,792
Horry	29,089	25,999	38,162
Orangeburg	33,419	26,611	39,793
Williamsburg	33,316	26,958	40,369

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2012.

Using the same criterion utilized above to examine employment specialization, labor earnings in Berkeley, Charleston, Clarendon, Dorchester, Horry, Georgetown, Orangeburg, and Williamsburg counties were most specialized in the government/non-NAICS sector (+3 percent), accommodation and food service (+2 percent), and arts, entertainment and recreation (+1 percent) (IMPLAN 2011). Income specialization in these sectors provides further evidence of the linkages between the Francis Marion National Forest and local economies. While management expenditures support income for local Forest Service employees, the Forest's natural and cultural amenities stimulate recreation and tourism spending

which generates income in services-related industries. In this manner, a portion of local income specialization can be directly attributed to the Francis Marion National Forest.

While the local economy surrounding the Francis Marion National Forest supports a large share of lower paying service jobs, the unique natural and cultural amenities of the Forest may provide additional benefits which help offset these low wages. Living in close proximity to national forest lands provides residents with greater access to open spaces, wildlands, and a wide range of recreational opportunities. While local residents may forego higher paying jobs in areas with fewer natural amenities, they gain personal enjoyment from the outdoor experiences they have on the Francis Marion. In this manner some residents may earn a “secondary income” from local natural amenities which complements the income they earn through traditional employment. Natural amenities, often provided by public lands, have been found to influence population and employment changes in amenity rich communities (Knapp and Graves 1989; Clark and Hunter 1992; Treyz et al. 1993; Mueser and Graves 1995; McGranahan 1999; Lewis et al. 2002). As a steward of coastal South Carolina’s unique natural and cultural amenities, the Francis Marion National Forest increases the attractiveness of local communities and increases regional well-being.

Non-labor Income. Personal income also includes non-labor income individuals receive from sources other than an employer. In general there are two categories of non-labor income, investment income (dividends, interest, and rent payments) and transfer payments from the government to individuals (retirement and disability insurance, medical payments, welfare assistance, unemployment, and veteran’s benefits). Non-labor income’s share of TPI has grown drastically in recent years. In 1970 non-labor income accounted for nearly 18 percent of TPI within the study area and the State of South Carolina. By 2011 non-labor income had grown to represent more than 37 percent of TPI in these regions (Bureau of Economic Analysis 2012).

Non-labor income’s increasing share of regional TPI can be attributed to increases in both investment income and transfer payments. Between 1970 and 2011 investment income as a share of TPI within the study area grew from 10 percent to 15 percent while transfer payments increased from 8 percent to 23 percent. As shown in table 6-11, there was considerable variation in the forms of non-labor income and their share of TPI across counties in the study area. While investment income accounted for a sizable share of TPI in Charleston, Georgetown, and Horry counties, transfer payments generally represented a larger share of TPI across the study area (24 percent). Transfer payments in the study area played a more significant role in supporting personal income than at the State or national level, with age and income maintenance payments contributing a larger share of TPI (Bureau of Economic Analysis 2012).

As discussed earlier in the demographics section, the population surrounding the Francis Marion National Forest is slightly older than the general population and the region’s median age is likely to continue to rise. As the region’s “baby boom” population grows, age-related transfer payments as a share of income from non-labor sources is likely to rise. Since communities with more retired residents are typically less dependent on employment as a source of income, communities with aging populations may be more resilient to economic downturns (USDA-Forest Service 2010).

Table 6-11. Non-labor income as a share of total personal income, 2011

	Total Personal Income (\$1,000)	Non-labor Income Share	Percent of Total Personal Income		
			Investment Income	Age-related Transfer Payments	Income-maintenance-related Transfer Payments
United States	\$13,221,853,005	34%	16%	10%	5%
South Carolina	\$159,511,644	37%	14%	14%	6%
Study Area	\$41,355,058	38%	15%	13%	6%
Berkeley	\$6,218,020	27%	9%	10%	4%
Charleston	\$15,213,359	35%	18%	10%	4%
Clarendon	\$866,192	51%	13%	21%	14%
Dorchester	\$4,814,413	28%	9%	11%	5%
Georgetown	\$2,352,229	51%	21%	21%	7%
Horry	\$8,224,006	46%	18%	18%	6%
Orangeburg	\$2,718,079	44%	11%	16%	11%
Williamsburg	\$948,760	48%	10%	18%	14%

Source: Bureau of Economic Analysis (Tables CA05N & CA35).

Rural county population change, the development of rural recreation, and retirement-destination areas are all related to natural amenities (Knapp and Graves 1989; Clark and Hunter 1992; Treyz et al. 1993; Mueser and Graves 1995; McGranahan 1999; Lewis et al. 2002). As a steward of natural amenities the Francis Marion National Forest can be consequently be attributed with attracting a portion of retirees and age-related non-labor income to the region; thus the Francis Marion National Forest may play a role fostering a more resilient economy.

Poverty. Poverty is an import indicator of both economic and social well-being. Individuals with low incomes are more vulnerable to a number of hardships which may negatively affect their health, cognitive development, emotional well-being, and school achievement, and promote socially unacceptable behavior (Williams 1984; Patterson 1991; Haan et al. 1986; Battistich et al. 1995; Farrington 1995; Chung 2004; Booth and Caan 2005; and Hopson and Lee 2011). Following the Office of Management and Budget's Directive 14, the Census Bureau uses a set of income thresholds that vary by family size and composition to detect who is poor. If the total income for a family or an individual falls below the relevant poverty threshold, then the family or an unrelated individual is classified as being "below the poverty level."

Table 6-12. Poverty rates, 2011

	People Below Poverty	Families Below Poverty
United States	14%	10%
South Carolina	17%	13%
Berkeley	14%	11%
Charleston	17%	12%
Clarendon	21%	16%
Dorchester	12%	10%
Georgetown	21%	14%
Horry	17%	12%
Orangeburg	25%	20%
Williamsburg	33%	27%

Source: U.S. Census Bureau, 2012.

Relative to the general U.S. population, South Carolina and the eight-county study area had a slightly larger share of residents and families living below the poverty line in 2011 (Table 6-12). Poverty rates were exceptionally high in Clarendon, Georgetown, Orangeburg, and Williamsburg counties, and exceeded rates at both the State and national level (U.S. Census Bureau 2012). In general, low income individuals tend to rely more heavily on natural resources and depend more directly on national forest lands for sustenance and home heating. Since these individuals will be more vulnerable to changes in the management of local resources, it is important for Forest management to understand how these Forest users may be affected by restricting Forest uses.

Environmental Justice

In 1994, President Clinton issued Executive Order 12898. This order directs Federal agencies to focus attention on the human health and environmental conditions in minority and low-income communities. The purpose of EO 12898 is to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Environmental justice is the fair treatment and meaningful involvement of people of all races, cultures, and incomes, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The goal of environmental justice is for Federal agency decision-makers to identify impacts that are disproportionately high and adverse with respect to minority and low-income populations and identify alternatives that will avoid or mitigate those impacts. According to USDA DR5600-002 (USDA 1997), environmental justice, minority, minority population, low-income, and human health and environmental effects, are defined as follows:

Environmental justice means that, to the greatest extent practicable and permitted by law, all populations are provided the opportunity to comment before decisions are rendered on, are allowed to share in the benefits of, are not excluded from, and are not affected in a disproportionately high and adverse manner by, government programs and activities affecting human health or the environment.

Minority means a person who is a member of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

Minority population means any readily identifiable group of minority persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities.

Low-income population means any readily identifiable group of low-income persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities. Low-income populations may be identified using data collected, maintained and analyzed by an agency or from analytical tools such as the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty.

Human health and/or environmental effects as used in this Departmental Regulation includes interrelated social and economic effects.

The emphasis of environmental justice is on health effects and/or the benefits of a healthy environment. The CEQ has interpreted health effects with a broad definition: "Such effects may include ecological, cultural, human health, economic or social impacts on minority communities, low-income communities or Indian Tribes ...when those impacts are interrelated to impacts on the natural or physical environment" (CEQ 1997).

Based on the data presented in the previous sections relating to population demographics and employment and income, it is evident that environmental justice populations exist within the Francis Marion National Forest's study area. Census data indicated that the area surrounding the Francis Marion National Forest included high concentrations of African American and low income populations, increasing the likelihood of these groups experiencing disproportionately high and adverse effects related to changes in the management of Francis Marion National Forest resources. To mitigate adverse impacts on environmental justice populations Forest management may need to facilitate additional public outreach in these communities to ensure that environmental justice populations are involved in scoping and alternative development.

Forest Users and Contributions

Communities Interested in Francis Marion National Forest Management. Communities within the eight-county study area can be described by the areas they live in and by their connections to the local landscape. When we look at the effects of Federal land management actions, the most critical impacts are often felt by small, rural communities (USDA USFS 2000). Consequently, geographically defined communities are an important and relevant level for social assessment. However, the geographically based community refers to physical or political boundaries and not to the relationships among people who reside within these boundaries. Brown and Duguid describe communities of interest as "communities-of-communities" (Brown and Duguid 1991); they provide unique opportunities to explore the linkages between people and public land that may transcend the geographically defined community. Comments received during internal discussions with the Forest in support of this Forest plan revision indicate that communities of interest exist for individuals and groups³ interested in:

- outdoor recreation and Forest access
- natural landscapes and scenic beauty
- wildlife
- historic and cultural significance
- timber and wood products

Forest Contributions. The Francis Marion is managed in accordance with the Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528–531) to sustain the multiple uses of its renewable resources while

³ Identified communities are not mutually exclusive; for example, individuals and groups interested in non-motorized recreation opportunities may also include individuals interested in animal and plant habitat.

maintaining the long-term health and productivity of the land. The Francis Marion National Forest's resources are managed for the long-term social and economic benefit of human communities. Economic benefits of managing Forest resources can be measured in terms of the jobs and income which they support in forest-related industries. In addition to employment and income contributions directly supported by Forest expenditures and employment, the Forest's resources directly contribute to economic activity in the local recreation and tourism and timber industries which in turn stimulates economic activity in supporting and non-forest related sectors. Employment and labor income generated in these seemingly unrelated sectors are known as the secondary, or indirect and induced effects of economic activity supported by the Forest.

Recreation. South Carolina's diverse geography and abundance of natural amenities have played an important role in making the State a retirement and recreational and tourist destination. Significant growth in services-related industries in recent years highlights the growing economic importance of the State's tourism industries and suggests that the economic drivers of the State have shifted away from agriculture-related industries towards those related to tourism and recreation. According to South Carolina's 2008 State Comprehensive Outdoor Recreation Plan (SCORP), the State hosts approximately 29 million domestic visitors and nearly 1 million international visitors annually. In 2008 the State's tourism and travel industry was estimated to account for approximately 9 percent (\$10.9 billion) of South Carolina's Gross State Product (GSP) and supported more than 216,000 jobs within the State, and forecasted that tourism would account for a growing share of the State's economic activity over the foreseeable future (SCORP 2008). Outdoor recreation is attributed with playing an integral role in South Carolina's flourishing tourist industry. More than 11 million South Carolina visitors annually are estimated to participate in some form of outdoor recreation during their trip. Coupled with heritage and cultural tourism, outdoor recreation is believed to provide significant economic benefits to all regions of the State, especially to rural communities (SCORP 2008).

The Francis Marion supports a wide range of outdoor experiences which attracts thousands of local and non-local visitor's to the Forest each year. According to recent results from the National Visitor Use Monitoring (NVUM) program the Francis Marion National Forest supports approximately 431,903 visits a year. As shown by Table 6-13⁴, people visit the National Forest to participate in activities such as fishing, hiking, boating, mountain biking, camping, horseback riding, canoeing, wildlife viewing, and interpretation of historical sites. Deer hunting with dogs, still deer hunting, small game and turkey hunting are among the most popular activities on the Francis Marion with 21 percent of visitors reporting hunting as the primary reason for their Forest visit.

Opportunities for recreational, cultural, and leisure activities provided by the Francis Marion are unique and are attributed with attracting and maintaining local and non-local visitor spending in the local eight-county economy. Visitors traveling to the Forest to recreate often eat in local restaurants, shop in local retailers, and purchase gas and lodging. If recreational opportunities on the Francis Marion National Forest did not exist, recreationists and their recreation-related spending would likely travel elsewhere. In this manner the recreational opportunities supported by national forest lands contribute to the local economy by attracting and maintaining visitor spending in communities surrounding the Forest.

⁴ U.S. Forest Service manages South Carolina's Francis Marion National Forest and Sumter National Forest as one administrative unit. Although they are two distinct national forests, they are treated as a singular Forest for all intents and purposes. Although subforest total visitation was able to be estimated from NVUM data using the White (2007) method, forest participation rates by activity are reported by forest and cannot be scaled down to subforest units. While actual activity participation rates on the Francis Marion may be higher or lower than rates reported for the Francis Marion-Sumter National Forests, it is reasonable to assume that recreation participation rates on the Francis Marion are comparable to those reported for the administrative unit.

Table 6-13. Activity participation on the Francis Marion-Sumter National Forests

Activity	% Participation	% Main Activity
Relaxing	52.1	0.8
Viewing natural features	26.6	5
Viewing wildlife	25.9	3.6
Other non-motorized	25.8	18.1
Hiking/walking	23.1	4.2
Hunting	23	21.3
Driving for pleasure	21.8	2.8
Motorized trail activity	21.3	11.4
OHV use	17.1	4.3
Some other activity	10.1	9.8
Picnicking	9.5	2
Fishing	8.3	4.8
Non-motorized water	8	6.5
Developed camping	4	0.2
Nature center activities	3.4	0.9
Nature study	3.3	0.2
Visiting historic sites	2.6	0
Bicycling	1.9	0.1
Horseback riding	0.9	1
Motorized water activities	0.7	0.2
Gathering forest products	0.7	0
No activity reported	0.2	3.1
Other motorized activity	0.1	0
Primitive camping	0.1	0
Backpacking	0.1	0

Source: USDA Forest Service, NVUM, 2011.

Recreational and wildlife related experiences on the Francis Marion National Forest are an important attraction which draws visitors to the region. Visitors traveling to the Forest to recreate often eat in local restaurants, shop in local retailers, and purchase gas and lodging. Spending by Forest visitors is attributed with supporting jobs and income in gateway communities which surround the National Forest. In total spending by recreationists on the Forest supports approximately 103 local jobs and nearly \$3.1 million in labor income in the eight counties surrounding the National Forest. On an annual average basis approximately 77 of these jobs and \$1.8 million of the labor income attributed to Forest recreation is supported in the accommodation and food services; arts, entertainment, and recreation; and retail trade sectors (IMPLAN 2011).

While providing recreation opportunities to local residents is an important contribution, recreation expenditures made by locals does not introduce new money into the local economy. If recreational opportunities on the Forest were not available, residents would likely substitute Forest recreation for other locally based activities and continue to make recreational expenditures locally. Non-local visitation to the Francis Marion National Forest injects new money into communities surrounding the Forest and

generates local employment and income which may not exist in the local economy otherwise. On an annual average basis recreation-related expenditure by non-local Forest visitors supports 42 jobs and approximately \$1.2 million in labor income within the eight-counties surrounding the Francis Marion National Forest (IMPLAN 2011).

Timber & Forest Products. Forest products have played an important role in South Carolina's history and economy. Dating back to early colonial America, the timber industry is one of the State's oldest and most successful industrial sectors. Timber continues to be the top ranked cash crop in 45 of the State's 46 counties. With more than 13 million acres of South Carolina's forest used for the production of commercial wood products, the delivered value of products harvested from timberlands across the State was valued at nearly \$679 million in 2009. Economic activity associated with timberlands is can be attributed with making the State's forestry and wood products industry was the State's largest manufacturing industry in 2010, employing approximately 9,624 people with a payroll of \$4.1 million (South Carolina Forestry Commission 2011). Forestry, logging, and wood processing also play an important role within the eight-county analysis area. Of the 5.2 million acres of land which make up the analysis area, approximately 3.1 million of these acres were timberlands (South Carolina Forestry Commission 2011) which are attributed with supporting more than 7,000 forestry and logging jobs within the Francis Marion National Forest analysis area in 2011 (IMPLAN 2011).

In accordance with the Multiple-Use Sustained-Yield Act, the Francis Marion is managed to ensure that the Forest continues to achieve and sustain a high level of timber production. The timber and wood products grown and harvested from the Francis Marion National Forest bolster the region's timber industry and contribute to the social and economic well-being of the region. In 2011 271 CCF of sawtimber, 274 CCF of pulpwood, 7,186 CCF of smaller non-saw timber products (which include pulpwood and chip and saw), and 25 CCF of fuelwood were harvested from the Francis Marion (USDA NRM 2012). While timber and wood products from national forest lands account for only a small share the region's timber, forest products from the Francis Marion National Forest directly support employment in logging and wood manufacturing firms in the area and indirectly contribute to employment in number of other industrial sectors (Table 6-14). It is estimated that timber and wood products from the Francis Marion support a total of 36 local jobs and nearly \$1.7 million in wages and proprietor's income across the eight-county analysis area (IMPLAN 2011). Approximately 15 of these jobs and \$934,000 of local labor income is supported in the agriculture and manufacturing sectors, these sectors include firms which specialize in forestry and logging and primary and secondary forest product processing.

Forest Expenditures and Employment

Management of the Francis Marion National Forest directly contributes to the local economy by employing individuals living within the area and by spending federally appropriated dollars on goods and services to carry out management programs. In recent years expenditures on Forest programs and personnel for the Francis Marion have averaged \$10.4 million a year. Program-related expenditures do not include expenditures associated with emergency fire suppression since these cannot be considered consistent contributions to the area economy.

Although field support for the Francis Marion comes from the district ranger's office in Huger, financial and administrative support for the Forest is provided by the Forest supervisor's office in Columbia, South Carolina. On an average annual basis, expenditures associated with the management of the Francis Marion support 148 jobs (direct, indirect, and induced) and approximately \$8.7 million in local labor income in the 11 counties which surround the Francis Marion National Forest and supervisor's office. These counties include Berkeley, Calhoun, Charleston, Clarendon, Dorchester, Georgetown, Horry, Lexington, Orangeburg, Richland, and Williamsburg counties (IMPLAN 2011).

Payments to States and Counties. While National Forest lands accounts for 5 percent of the land within the eight-county study area, 25 percent of Berkeley County and 10 percent of Charleston County is National Forest land. The Forest Service makes payments to states and counties that contain National Forest lands. These payments fall into two categories: Payments in Lieu of Taxes (PILT) and Secure Rural Schools and Community Self-Determination Act payments (SRSCS) (Table 6-14).

Federal agencies do not pay property taxes; therefore, PILT is distributed to counties to compensate for the local services that support activities on Federal lands. These services include law enforcement, road maintenance, and fire departments.

SRSCS payments redistribute a share of revenue generated from activities on Forest Service lands back to the counties. These payments are intended to improve public schools, maintain infrastructure, improve the health of watersheds and ecosystems, protect communities, and strengthen local economies. SRSCS payments are estimated to support eight jobs and more than \$373,000 in local income in the eight-county study area (IMPLAN 2011).

Table 6-14. Payments to states and counties from the Francis Marion National Forest, 2012

	SRSCS (FY12)	PILT (FY12)	Total Payments Associated with NFS Land
Berkeley County	\$412,518	\$66,015	\$478,533
Charleston County	\$85,687	\$22,145	\$107,832
Francis Marion NF	\$498,205	\$88,160	\$586,365

Source: USFS (2011) and DOI (2010).

Non-market Values. The true value of the Francis Marion National Forest is equal to the value of all goods and services it provides society. Generally goods and services are traded in markets where interactions between buyers and sellers determine the price, or value, of a good based on unit prices and the quantities sold. While the natural resources within the Francis Marion National Forest produce a wide range of environmental goods and services, markets in which these forest products can be bought or sold do not always exist. Some goods, like forage for cattle, can easily be valued because livestock feed can be bought and sold in markets. Other resources on the Francis Marion National Forest, like sites of cultural or historic significance, recreational opportunities, ecological processes, and scenic views cannot be bought and sold in traditional markets, which is why these resources are often characterized as non-market goods. Although the public benefits from these goods, the lack value in the traditional sense of market prices often causes these resources to be undervalued.

Non-market values can be broken down into two categories, use and non-use values. The use-value of a non-market good is the value individuals receive from the direct use of natural resource or non-market good. Within the Francis Marion National Forest use-values exists for recreational activities such as hunting, hiking, canoeing, and wildlife viewing. The use of non-market goods often requires consumption of associated market goods, such as food, gas and lodging expenditures incurred by Forest visitors.

Non-use, or passive use, values of a non-market good reflect the value of an asset beyond its current use. These can be described as existence, option and bequest values. Existence values are the amount society is willing to pay to guarantee that an asset simply exists. An existence value for the Francis Marion National Forest might be the value of knowing that undisturbed native plant habitat exists or the value associated with undeveloped scenic landscapes. In addition to implicit existence values, society's willingness to pay to preserve resources for future use attaches additional passive use values. The potential benefits people would receive from future use are referred to as option values when future use is

expected to occur within the same generation and bequest values when preservation allows future generations to benefit from the resource use. Within the Francis Marion National Forest bequest and option values might exist for numerous plant species, wild and scenic rivers and landscapes, historical sites, and recreational trails.

While non-market values may exist for many of the Francis Marion National Forest's natural resources, it can be very difficult to quantify use and non-use values. Since the methodologies for measuring these values can be controversial and difficult to apply, non-market goods tend to be undervalued. While it is not feasible to estimate non-market values during the planning process, it is important for Forest management to recognize that the true value of Forest resources include both market and non-market values so that they can make more informed decisions regarding their use. Many of these non-market values are discussed in other resource sections of the assessment and in section 7.1.1.2 "Benefits People Obtain from the National Forest System Plan Area."

6.1.1.4 Sustainability

National forests are productive assets which contribute to sustaining the viability of national, regional, and local communities. Uses, products, services, and visitor opportunities supported by national forest system lands produce a steady flow of benefits which contribute to the robustness and sustainability of local communities. While robustness implies diversity, sustainability refers to the community's capacity to maintain a certain level of function within the social, ecological, and economic systems it encompasses. Sustainability is a complex idea focused around intergenerational equity. This concept relates to the maintenance and enhancement of resources in order to meet the needs of current and future generations. The three components of sustainability are (Gilbert et al. 1996):

- *Environmental sustainability* – requires natural capital to remain intact so that natural systems can continue to complete the ecological processes essential to life.
- *Social sustainability* – requires the cohesive nature of society to remain intact so that people can continue to work towards common goals.
- *Economic sustainability* – occurs when development, that moves towards social and environmental sustainability, is financially feasible.

Sustainability is difficult to measure since the concept lacks a universally agreed-upon definition. The most widely accepted definition of sustainability was developed by the United Nation's Brundtland Commission and has since been incorporated into the Code of Federal Regulations (CFR), where sustainability is defined as the capability to meet the needs of the present generation without compromising the ability of future generations to meet their needs (36 CFR 219.19). As mentioned above, national forests are managed in compliance with the Multiple-Use Sustained-Yield Act so that their renewable resources are managed for the long-term social and economic benefit of human communities. By managing the uses, products, services, and visitor opportunities of national forests for their long-term viability, forest management fosters the social and economic ties between people and forest landscapes which create more resilient communities.

Economic Sustainability

The long-term livability of communities is closely related to the health of the local economy. Communities that bolster vital economies provide greater opportunities for income, employment, and leisure. These opportunities increase the attractiveness to live and work within the area, and help communities retain and attract local residents. Economic sustainability refers to the capability of society to produce and consume or otherwise benefit from goods and services, including contributions to jobs and market and nonmarket benefits (36 CFR 219.19). Forests contribute to local economic sustainability

through the income, employment, and leisure derived from forest resources. As discussed above in the “Forest Contributions” section, the natural resources of the Francis Marion support approximately 147 local jobs and more than \$5.1 million in labor income within the eight-county economy on an annual average basis (IMPLAN 2011). These contributions to local employment and labor income are derived from the Forest products and recreational opportunities provided by the Francis Marion.

Jobs and income provide a useful metric by which local economic activity supported by forests can be measured. Table 6-15 shows the Francis Marion’s contributions to income and employment relative to total income and employment in the eight-county analysis area. Because of the large size of the analysis area, contributions from the Forest appear relatively small in the regional economy as a whole. The large and diverse economy of Charleston County, South Carolina, tends to dilute the effects of locally important industries. The Francis Marion National Forest’s contribution to small rural communities in the analysis area would certainly be larger. Because it is not possible to attribute Forest outputs to each county, it is not possible to analyze the county-by-county or an individual community’s contributions to employment and labor income.

The Francis Marion contributes to the economic sustainability of forest-dependent communities by cultivating a robust tourism and recreation industry and by continuing to support economic activity in local logging and wood manufacturing industries. Understanding how these forest-related industries benefit from the Francis Marion National Forest’s resources is essential to understanding the consequences of changes in forest management. As part of the assessment process Forest specialists identified how the Forest’s multiple uses (timber, watershed, fish and wildlife, and outdoor recreation), infrastructure, and cultural and historic resources contribute to the viability of the local economy.

Table 6-15. Forest contributions to local employment and income

Industry	Employment (jobs)		Labor Income (thousands of 2011 dollars)	
	Area Totals	FMNF-Related	Area Totals	FMNF-Related
Agriculture	7,923	7	\$192,596	\$296
Mining	654	0	\$103,313	\$6
Utilities	1,691	0	\$148,344	\$39
Construction	30,595	2	\$1,481,650	\$97
Manufacturing	34,521	8	\$2,420,460	\$663
Wholesale Trade	13,081	5	\$754,017	\$289
Transportation & Warehousing	18,534	5	\$841,091	\$200
Retail Trade	75,128	24	\$2,253,189	\$674
Information	8,342	1	\$476,591	\$68
Finance & Insurance	27,057	3	\$1,230,943	\$146
Real Estate & Rental & Leasing	38,344	5	\$564,579	\$66
Professional, Scientific, & Technical Services	36,098	4	\$2,259,816	\$233
Management of Companies	2,945	1	\$204,845	\$45
Administration, Waste Management & Remediation Services	42,669	7	\$1,238,746	\$181
Educational Services	7,747	1	\$245,021	\$21
Health Care & Social Assistance	49,948	5	\$2,655,622	\$239
Arts, Entertainment, and Recreation	20,142	19	\$367,584	\$428
Accommodation & Food Services	70,712	41	\$1,637,333	\$870
Other Services	30,718	4	\$1,105,298	\$147
Government	103,034	6	\$7,853,719	\$439
Total FMNF Contributions	619,882	147	28,034,757	5,147
Contributions as Percent of Total		0.02%		0.02%

Source: IMPLAN (2011).

Timber. As discussed in section 8 “Multiple Uses” and above in the “Forest Contributions” section, the timber industry has been an important part South Carolina’s economy for centuries and is anticipated to continue to play a major role in the Lowcountry’s economy well into the foreseeable future. Economic benefits realized by the analysis area from the Forest’s timber resources include: (1) Forest revenue generated from timber sales⁵, (2) profits to businesses from the sale of wood products, (3) wages for those working in the wood and wood products industry, (4) sales income of other dependent industries, and (5) local tax revenue from levies on forestry-related goods and services. In addition to economic benefits of timber harvesting, local communities receive economic benefits from leaving national forests’ timber resources intact. Intact timber stands are a valuable forest resource since timber values increase with maturity and when made accessible to visitors, mature timber stands support recreational, spiritual, and cultural activities which contribute attracts tourists and outdoor enthusiasts to area.

⁵ Although all revenue from timber sales on the Francis Marion are collected by the Federal government, a portion of revenues generated from Forest uses is distributed back to the counties of production. In this manner Berkley and Charleston counties receive revenue from timber sales on national forest land.

Harvesting the Francis Marion's timber resources also serves valuable function in helping to achieve desired conditions, maintaining or restoring key ecosystem characteristics, and improves forests' resistance and resilience to stressors. Ecologists have found that ecosystem resiliency is strongly correlated with ecological diversity. Social scientists have adapted these findings to develop the premise that more diverse communities generally adapt to and integrate change more rapidly and successfully than their less diverse counterparts. Community or socioeconomic resiliency relates to humans' ability to adapt to social and economic changes. Beckley et al. (2002) define community resiliency as: "the capacity of humans to change their behavior, redefine economic relationships, and alter social institutions so that economic viability is maintained and social stresses are minimized." If managing timber resources for ecosystem health does in fact increase human's ability to adapt to changes in their social and economic environment, then timber management on the Francis Marion can be attributed with increasing the resiliency of local communities.

Outdoor Recreation. Tourism is the largest economic activity associated with natural settings in the planning area. As discussed in section 8, "Multiple Uses", section 9 "Assessing Recreation Settings, Opportunities, Access and Scenic Character", and in the previous "Forest Contributions" section, many individuals rely on the Francis Marion to provide opportunities for a wide range of recreational activities. Trends presented in the "Social and Economic Existing Conditions" section suggest that the economic base of many nearby communities is shifting towards service and experience businesses that rely on outdoor recreation for their customers and as quality of life attractions for employees.

As discussed above in the "Forest Contributions" section, recreational experiences supported by the Francis Marion's natural, cultural, and historic resources are unique and are attributed with stimulating economic activity in services-related sectors that support the local tourism and recreation industry. In total, spending by recreationists on the Forest supports approximately 103 local jobs and nearly \$3.1 million in labor income on annual average in the eight counties surrounding the National Forest (IMPLAN 2011). Economic activity stimulated by recreation on the Francis Marion National Forest also contributes to long-term viability of the local economy by attracting new money (money earned outside the local economy) into communities surrounding the Forest. The injection of non-local dollars through purchases of gas, food, lodging, and concessions prevents the local economy from becoming stagnant and generates opportunities for employment and income which may not exist in the local economy otherwise. Expenditures by non-local Forest visitors support approximately 42 jobs and \$1.2 million in labor income within the eight-counties surrounding the Francis Marion on annual average (IMPLAN 2011).

Fish and Wildlife. Fishing, hunting, and wildlife watching significantly contribute to South Carolina's economy and continue to be extremely important economic driver in rural communities. Combined, it is estimated that the total economic impact of fishing, hunting, and wildlife viewing in South Carolina is over \$3,794,000,000 per year, and these activities are directly attributed with supporting more than 44,600 jobs across the State (South Carolina Department of Vocational Rehabilitation 2009). While opportunities to participate in fishing, hunting, and wildlife viewing exist across the State, those provided by the Francis Marion National Forest are considered to be exceptionally unique opportunities.

The Francis Marion is one of the most biologically and ecologically diverse forest landscapes in the Southeast region. As discussed in section 8 "Multiple Uses", the diverse natural landscapes of the Forest provide habitat for many native and endangered species of fish and wildlife and is designated as an "important bird area" by both the National Audubon Society and the American Bird Conservancy. Wildlife-related activities on the Francis Marion National Forest are an important attraction which draws visitors to the region, and the fish and wildlife managed by the National Forest are inputs in the production of wildlife-related experiences. According to 2011 NVUM data, wildlife-related activities accounted for approximately 21 percent of all Forest visits each year. As shown by Table 6-13, nearly 26

percent of Forest visitors are estimated to participate in wildlife viewing, 23 percent participate in hunting, and 8 percent fished while recreating on the Francis Marion National Forest. NVUM data also indicated that hunting and fishing are two of the most popular recreational activities pursued on the Francis Marion National Forest, and were reported to be the primary purpose of 21 percent and 5 percent of annual Forest visits, respectively.

The tourism and recreation industry has become an increasingly more important sector within the Francis Marion National Forest's analysis area. As discussed above in the "Forest Contributions" section, visitors traveling to the Forest to recreate often eat in local restaurants, shop in local retailers, and purchase gas and lodging. Spending by Forest visitors is attributed with supporting jobs and income in gateway communities which surround the National Forest. In total spending by recreationists on the Forest supports approximately 103 local jobs and nearly \$3.1 million in labor income in the eight counties surrounding the National Forest. Since many Forest visitors travel to the Francis Marion National Forest specifically to participate in wildlife-related activities, fish and wildlife populations managed by the Forest are responsible for supporting a considerable share of Forest visits and local recreation-related spending each year. By managing healthy fish and wildlife populations forest management increases the Forest's ability to provide quality recreational experiences and contributes to economic sustainability by supporting a share of employment and income in the local tourism and recreation industry.

Watershed. South Carolina benefits from an abundant supply of water in the form of lakes, streams, rivers, wetlands and aquifers and the State's water resources remain relatively clean (SCORP 2008). As described in section 8 "Multiple Uses" the water resources of the Francis Marion and the surrounding Lowcountry have played an important role in the history and development of the region and continue to provide consumptive and non-consumptive uses which contribute to the vitality and livability of local communities. Francis Marion National Forest's watershed provides habitat to indigenous populations of shellfish, fish and wildlife and supports recreational experiences on the Forest. The diverse network of waterways which connects slow moving blackwater creeks to the Atlantic Intracoastal Waterway provides visitors with access to water for boating, fishing, hunting, visual aesthetics, and desirable locations for picnicking and camping.

By managing the Francis Marion's water resources to maintain the ecological integrity of the watershed, forest management promotes healthy fish and wildlife populations which contribute to local economic sustainability through Forest recreation as discussed in the above "Fish and Wildlife" section. In addition to the economic contributions supported by wildlife-related recreation, adaptive management to maintain the quality and quantity of Forest water resources further contributes local tourism and recreation by providing opportunities for high quality non-motorized and motorized water recreation. According to 2011 NVUM data, approximately 9 percent of Forest visitors participate in water activities while recreating on the Francis Marion National Forest each year. Although the Forest supports motorized water activities, the Francis Marion National Forest's waterways and wetlands are more heavily used by non-motorized water recreationists. NVUM estimated that 8 percent of Forest visitors participated in non-motorized water recreation and that these activities were reported to be the primary purpose of nearly 7 percent of Forest visits each year. By supporting these opportunities for unique water-based recreation on the Francis Marion National Forest, the Forest's water resources further contribute to local economic sustainability by attracting kayakers, canoers, boaters, and swimmers to the Forest.

Renewable and Nonrenewable Energy and Mineral Resources. Although there are no mineral or nonrenewable energy operations operating on the Forest at this time, there is the potential to develop mining of limestone or sand on the Francis Marion National Forest and Forest management is exploring opportunities to provide logging debris for gasification. While renewable and nonrenewable energy and mineral resources on the Forest do not currently contribute to local economic sustainability, technological

advances and changes in lease stipulations could increase the exploration, development, and extraction of Forest resources in the future. Future development of Forest's energy and mineral resources would stimulate economic activity in the agricultural and mining sectors and increase local employment and income in these sectors. In this manner, the Francis Marion's renewable and nonrenewable energy and mineral resources have the potential to contribute to local economic sustainability in the future.

Designated Areas. The Francis Marion manages a number of administratively designated recreation and interpretative areas which serve as a gateway to the Forest's natural landscape (Table 6-16). These sites support opportunities for Forest visitors to participate in recreational and educational activities and provide them with access to facilities designed to improve the quality of Forest experiences (see the below discussion on Forest infrastructure for further discussion of Forest facilities). While many visitors are attracted to the Francis Marion National Forest to participate in dispersed recreational activities, designated recreation and interpretative areas serve as the primary destination for the majority of Forest visitors. Special site designations increase awareness of recreational and educational opportunities on the Forest which translates to increased tourism and local recreation-related spending. By increasing recreational use the designated recreation and interpretative areas of the Francis Marion increase employment and income stemming of the region's robust tourism and recreation sector and contributes the sustainability of the local economy.

Table 6-16. Designated areas and recreational uses

Area	Primary Uses
Recreation Areas	
Buckhall Recreation Area	Camping, RV camping, fishing, picnicking, motorized and non-motorized water activities
Elmwood Campground	Camping, big game hunting
Honey Hill Campground	Camping, picnicking
Halfway Creek Trail Campground	Camping, hiking, mountain biking
Twin Ponds Rifle Range	Target shooting
Boggy Head Rifle Range	Target shooting
Huger Recreation Area	Fishing, picnicking, non-motorized water activities
Interpretative Areas	
Sewee Visitor and Environmental Education Center	Visitor center, interpretive programming loop trail, fishing
Sewee Shell Ring Interpretive Trail	Outdoor learning, viewing scenery
Battery Warren	Trail, interpretive information
I'on Swamp Interpretive Trail	Outdoor learning, hiking, wildlife viewing

Infrastructure. As discussed in section 11 Forest infrastructure helps support the mission of the Forest and increases the ability for Forest users to access and enjoy the Francis Marion National Forest. Over the years Forest management has invested millions to construct and maintain roads, trails, and facilities which improve the quality of visitor experiences. In addition to the extensive network of roads and trails which provide visitors with access to the Forest's stunning landscapes, the Francis Marion National Forest provides facilities at a number of developed and dispersed recreation and interpretative areas (Table 6-17).

Table 6-17. Recreation sites and their facilities

Sites	Facilities
<i>Recreation Areas</i>	
Buckhall Recreation Area	Camping with electric hookups, picnic, boat ramp, fishing pier, trailhead
Elmwood Campground	Camping, vault toilet, game check station
Honey Hill Campground	Camping, vault toilet
Halfway Creek Trail Campground	Camping
Twin Ponds Rifle Range	Covered shooting benches
Boggy Head Rifle Range	Covered shooting benches
Huger Recreation Area	Picnic, vault toilet, boat ramp
<i>Interpretative Areas</i>	
Sewee Visitor and Environmental Education Center	Visitor center, interpretive programming loop trail, fishing
Sewee Shell Ring Interpretive Trail	Boardwalks, interpretive information
Battery Warren	Trail, interpretive information
I'on Swamp Interpretive Trail	Trail, interpretive information

Investment in infrastructure has significantly increased the public's access to the Francis Marion National Forest's natural landscape and has enabled the Forest to support a greater number of unique recreational and interpretive experiences to the public. These investments in Forest infrastructure can be attributed with not only increasing the quality of recreational and educational experiences on the Forest, but also with increasing the carrying capacity of developed and dispersed recreation sites. Although budget deficits have created a backlog of maintenance needs for existing facilities, trails, and roads, Forest infrastructure continues to contribute to the vitality of local economies by facilitating quality recreational and educational experiences attributed with attracting visitors to the Francis Marion National Forest. For further details on the contributions of recreational and educational Forest visits to local economic sustainability refer to the previous "Outdoor Recreation" section and the following "Cultural and Historic Resources" section.

Cultural and Historic Resources. As discussed in many of the sections describing Forest resources, the landscape of the Francis Marion National Forest has a rich history which dates back more than 15,000 years. Successive generations of native and early Americans have relied on the natural resources of the Francis Marion National Forest to foster social, economic, and spiritual growth and traces of past Forest users and uses remain scattered across the modern Forest landscape. As of today more than 4,000 archaeological sites, 4 historic buildings, and 2 historic fire lookout towers have been discovered on the Francis Marion National Forest. In addition to known sites with cultural and historic significance the potential to find additional resources which contribute to the knowledge of past human activities on the Forest remains high. The Francis Marion National Forest's cultural and historic resources are managed under several Federal statutes including: the Antiquities Act of 1906, the Wilderness Act of 1964, the National Historic Preservation Act of 1966 (NHPA), the National Forest Management Act of 1976 (NFMA), and the Archaeological Resources Protection Act of 1979. Heritage management on the Francis Marion National Forest seeks to locate, identify, and protect sites where artifacts of early human occupation have been found to increase the knowledge and appreciation for the unique heritage and natural history of South Carolina's lowcountry.

With the exception of interpretive areas occurring in major recreation areas, the Forest Service does not publicize the exact locations of culturally and historically significant resources to protect the integrity of

Forest heritage sites. Table 6-18 lists the designated interpretative areas managed by the Francis Marion National Forest and the reason for their cultural and historic significance. These developed heritage sites promote local heritage tourism which enables the public to enjoy our Nation’s heritage through greater knowledge and appreciation of local Forest history. Heritage tourism and educational experiences on the Francis Marion National Forest have been identified as an underutilized Forest resource. Although NVUM data indicates that nearly 3 percent of Forest visitors visit historic sites while recreating on the Francis Marion, historical sites were reported to be the primary reason for less than 0.01 percent of Forest visits. This indicates that Forest’s cultural and historic resources contribute slightly towards local economic sustainability by supporting unique visitor experiences on the Francis Marion, and suggests that further development of the Forest’s heritage programs may increase the demand for interpretative experiences which could increase future employment and income contributions associated with local heritage tourism.

Table 6-18. Designated interpretative areas for the Francis Marion’s heritage resources

Interpretative Areas	Cultural & Historic Significance
Sewee Visitor and Environment Education Center	Jointly operated by the Forest Service and the U.S. Fish and Wildlife Service, this 9,000-square-foot facility features hands-on interpretive displays exploring the heritage and natural history of the area.
Sewee Shell Interpretive Trail	The Sewee Shell Ring is the northernmost prehistoric coastal shell mound along the Florida, Georgia, and South Carolina coasts. Today the shell ring serves as a monument to prehistoric Native American culture and provides five interpretive sites along the scenic trail.
Battery Warren	Named after Colonel Samuel Warren, the local Revolutionary War hero who previously owned the land, the Battery served as an earthen gunning fort built to blockade Union forces from moving up the Santee River during the Civil War.
I’on Swamp Interpretive Trail	This interpretive loop follows the remnants the elaborate grid of canals and dikes to remnants of the 200-year-old Witheywood Planation which was once part of the State’s lucrative “Carolina Gold” rice trade. Interpretive sites along the trail provides information on the agricultural history of the region and how slaves brought over from Africa contributed to success of southern plantations.

Social Sustainability

Sustainable communities fulfill both the material and immaterial needs of their residents. While local economic conditions can be used as an indicator of material needs, immaterial needs are better reflected in the values (i.e., conceptions of what is good or bad, right or wrong, desirable or undesirable), beliefs (i.e., judgments about what is true or false), and attitudes (i.e., tendencies to react favorably or unfavorably to a situation, individual, object, or concept) of people (Allen et al. 2009). These immaterial needs are associated with the relationships, heritage, societal values, and institutions which enable people to share experiences. Shared social, cultural, and historic experiences cultivate a sense of community that connects people to one another and cause individuals to ascribe a deeper meaning to the place where they live (Eisenhauer et al. 2000). “The social, cultural, and emotional attachments people form to certain places are indicative of local quality of life and provide the foundation on which a sense of community is built. Sense of community is a feeling members have of belonging, a feeling that members matter to one another and the group, and a shared faith that each member’s needs will be met through their commitment to be together” (McMillan and Chavis 1986).

The long-term viability of communities is largely dependent upon the social, cultural, and emotional attachments members forge to people and places. Although communities are often thought of in terms of geographical boundaries, communities within the Francis Marion's eight-county study area can be described by their physical place and by their connections to the local landscape. This distinction is best characterized as the difference between communities of place (i.e., people who are bound together because of where they reside, work, visit or otherwise spend a continuous portion of their time) and communities of interest (i.e., people who share a common interest or passion, regardless of their location or degree of interaction) (Patterson et al. 2003). The distinction between place and interest is not mutually exclusive; in fact many communities share location and values, beliefs, and attitudes because community members choose to live near like-minded people.

Uses, products, services, and visitor opportunities supported by National Forests produce a steady flow of benefits which contribute to the sustainability of Forest dependent communities. While contributions to communities of place can be measured in terms of the economic activity Forest resources support in the local economy (discussed in the "Forest Users and Contributions" and the "Economic Sustainability" sections), the social and cultural links between the Forest and communities of interest often transcend the boundaries of a physical place. The Francis Marion contributes to the long-term vitality of communities of interest by supporting the shared traditions, culture, and activities of their members.

While each community of interest may have a unique character and unique priorities related to natural resource use, the Forest contributes to the liveliness of these communities by facilitating shared values, beliefs, and attitudes associated with the Forest's resources. In this manner, the Francis Marion contributes to the long-term sustainability of several communities of interest. Social sustainability refers to the maintenance of vibrant communities through the network of relationships, traditions, culture, and activities that connect people to each other and to the land (36 CFR 219.19). Preliminary discussions with the public and Forest specialists identified several communities of interest associated with the Francis Marion. These communities include people interested in recreation and Forest access, natural landscapes and development buffer areas, historic and cultural significance, and timber and wood products. Responses to a collaborative on-line tool known as "Crowdbrite" were collected at a public workshop and via the internet and provided valuable insight into what these communities believed, valued, and their attitudes towards the Francis Marion.

Communities Interested in Outdoor Recreation and Forest Access. Crowdbrite responses revealed that a large community of recreationists highly valued the Francis Marion because of the recreational experiences it supported. Members of the recreation community appreciated these Forest lands for providing opportunities for trail running, hiking, biking, canoeing and kayaking, camping, shooting, riding OHVs, birding, fishing, and hunting. Some recreationists had developed strong personal bonds with the Forest through years of participating in activities like hunting. Several comments highlighted that the Forest provided children with access to nature and that the recreational experiences it supported facilitated multi-generation Forest experiences where parents were given the opportunity to teach their children to appreciate and respect nature. The Francis Marion National Forest was also attributed with providing people with access to free forms of entertainment, like birding and various other types of wildlife viewing; access to these activities were attributed with increasing low-income residents' access to recreational experiences. Though conflicts arise over competing recreational uses, recreationists generally shared positive attitudes towards the Francis Marion and credited it as being an important recreational site in South Carolina's Lowcountry. By supporting unique recreational experiences the Francis Marion National Forest helps cultivate an appreciation for the outdoors that continues to be passed down to younger generations through recreational experiences thereby contributing to the longevity of recreational communities who use the Forest.

Communities Interested Natural Landscapes and Scenic Beauty. Public comments collected through Crowdbrite highlighted a large community of Forest stakeholders who shared a deep appreciation for the Forest's wild landscape and scenic beauty. These Forest stakeholders take great pleasure in using the Francis Marion as a refuge away from the people, noise, and pollution of cities, and credit the scenic, undeveloped landscapes of the Forest with improving their quality of life. The nature enthusiast community attributes the Francis Marion National Forest with contributing to the overall beauty of South Carolina's Lowcountry and valued its scenic resources for cultivating mental clarity and spiritual renewal. People associated with this community of interest escape to the Francis Marion because the exploration and quiet enjoyment of its diverse landscapes provides relief from the stress of their daily lives and promotes self-reflection and inner peace. Community members who live in cities believed that the Forest's natural beauty served as a reminder of the importance of incorporating nature in to their lives and enabled them to reconnect with a rural lifestyle. Even when unable to travel to the Forest, some nature enthusiasts find inner peace in knowing that these undeveloped lands are protected. The Francis Marion contributes to the longevity of nature loving communities by managing the Forest to protect the integrity of its visual resources so that it can continue to promote the mental, physical, and spiritual health of current and future generations.

Communities Interested in Wildlife. The Francis Marion is highly valued by a large community interested in natural plant and animal communities. Comments collected via Crowdbrite indicated that the Francis Marion National Forest was significant to them because it provided critical habitat to a wide range of terrestrial, aquatic, and avian wildlife. These stakeholders believe that management of the Francis Marion can be credited with protecting and enhancing habitat which is important to native and migratory wildlife. They consider the conservation of these lands to be extremely important to endangered species, neotropical migratory birds along the Atlantic Flyway, and to various populations displaced by extensive urban development in physical communities surrounding the Francis Marion National Forest. While public comments suggested that community members may derive pleasure from knowing habitat provided by the Francis Marion National Forest contributes to sustaining healthy animal and bird populations, most the value reflected in responses from these community members was derived from birding experiences on the Forest. Although wildlife enthusiasts are attracted to the Forest because it provides the opportunity to observe a wide variety of wildlife in a single visit, the Francis Marion National Forest is world renowned for the unique bird watching experiences. Several responses indicated that the Francis Marion was the only place to provide birders with an opportunity to see red-cockaded woodpeckers or Bachman's warblers in their natural habitat, making the Francis Marion extremely important to birding communities. By managing the Forest to protect and enhance wildlife habitats, the Francis Marion National Forest contributes to sustaining communities interested in wildlife by providing current generations with opportunities to view and learn about the region's native wildlife so they can pass knowledge down to future generations.

Communities Interested in Historic and Cultural Significance. Although the physical landscape of the Francis Marion has changed over time, the Forest's uplands, swamps, and marshes still holds "memories" of its past prehistoric, colonial, and military significance. Today the Francis Marion National Forest serves as a reminder of the collective and individual roots of many Americans. The historic features which hold these memories possess heritage values which help people form attachments to places and provide an understanding of their place in the natural and cultural environment. Comments solicited through Crowdbrite highlighted the Forest's importance to the culture and heritage of a large share of Forest stakeholders. The Forest is generally perceived as an important part of the cultural and heritage of the Lowcountry and attributed with protecting a number of historical sites. Many stakeholders believe that Forest management of these sites increases public awareness of and access to opportunities to learn and interpret their cultural and historic significance. By preserving and facilitating the interpretation of these

resources the Francis Marion National Forest ensures that the cultural legacy and heritage values of the Francis Marion's lands will be passed on to present and future generations.

Although comments received through Crowdbrite did not mention which cultures the Forest contributed to, the Francis Marion National Forest is located almost entirely within a federally recognized heritage area known as the Gullah Geechee Corridor. This corridor was established in 2006 to protect and enhance resources associated with the Gullah Geechee people. The Gullah Geechee are American descendants of enslaved immigrants brought over primarily from coastal West Africa. Years of captivity and relative isolation enabled various West African traditions, skills, and languages to fuse together, giving rise to the unique culture which has been passed down for generations. An inventory of the Corridor's historical, cultural, and natural resources, identified three Forest-dependent communities as having cultural landscapes⁶ and ethnographic resources⁷ that increase the awareness and understanding of the culture and history of the Gullah Geechee people (Gullah Geechee Cultural Heritage Corridor Commission 2012). Located entirely within the Francis Marion, the communities of Awendaw, Huger, and McClellanville are recognized for helping the Gullah Geechee share their heritage by supporting six primary interpretive themes: origins and early development; the quest for freedom, equality, education, and recognition; global connections; connection with the land; cultural and spiritual expression; and Gullah Geechee language. Since the natural and cultural landscapes of these communities are synonymous with those of the Forest, the management of Forest resources for long-term sustainability inherently contributes to the long-term viability of surrounding communities and to unique cultures of the people living within them.

Communities Interested in Timber and Wood Products. The lands which are now managed by the Forest Service as the Francis Marion National Forest have a long history with the Timber industry. Although historic harvests far exceeded those in recent years, modern timber management enables the Forest to provide a steady and reliable supply of forest products which contribute to sustaining communities interested in timber and wood products. Responses collected through Crowdbrite indicated that community members generally view the timber harvesting in a positive light, but believe that the extraction of timber-related goods needs to be done in ways which minimize adverse impacts to habitat and recreation. Recent restoration projects have provided timber and wood products for personal and commercial use and have been attributed with improving the health and function of the Francis Marion's diverse forest ecosystems. Although not all individuals interested in timber-related Forest products are in agreement over what the Forest's annual yield should be, Crowdbrite responses indicated that there is a general consensus that the Francis Marion needs to continue to improve its timber management to ensure future Forest users can rely on the these lands to provide Forest products for personal and commercial use. By managing timber resources to improve stand health and ensure reliable future yields, the Francis Marion contributes to the continued viability of communities of interested or dependent upon timber and forest products.

⁶ Cultural Landscapes are areas that reflect how people adapt and use natural resources, as expressed by the land organization or use, settlement patterns, circulation, or types of structures, and how the area reflects cultural values and traditions. The National Park Service categorizes cultural landscapes into four types: historic designed landscapes, historic vernacular landscapes, historic sites, and ethnographic landscapes. Cultural landscapes associated with the Gullah Geechee corridor may not be previously identified as "cultural landscapes," but can include sites that fulfill the above definition of a cultural landscape. Examples might include plantations, village sites, or other important places with ties to long-established groups identified with Gullah Geechee cultural history.

⁷ Ethnographic resources are any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. These resources generally relate to folklife, religious traditions, foodways, anthropology, ethnomusicology, or the humanities.